

A MASTER PLAN FOR THE IMPLEMENTATION OF SUSTAINABLE  
ENTERPRISE RESOURCE PLANNING SYSTEM

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## **DEDICATION**

To my beloved mother, father, and family

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## ABSTRACT

The world is faced with the problem of integration between sustainable business functions. Sustainability data are not sufficiently integrated and used for decision making. To solve this problem, organisations need information systems to facilitate their sustainability initiatives. A number of vendors such as SAP, Microsoft and Oracle have developed Sustainable Enterprise Resource Planning (S-ERP) systems as a holistic solution to support sustainability initiatives. However, organisations still face the problem of implementing this system. There is a lack of master plan, which shows the stages, dimensions and steps to assist the practitioners in implementing S-ERP systems. Therefore, this study attempts to develop an S-ERP implementation master plan that consists of roadmap, framework and guidelines, and to evaluate the usability of the master plan from academicians and practitioners perspective. In order to attain the research objectives, this study employs a conceptual research method which relies primarily on the literature for the development of a master plan. Various research fields including sustainability, Enterprise Resource Planning (ERP) system, and relevant literature were observed in order to discover how academicians and practitioners solved the problems of integration between sustainable business functions. Since an S-ERP system is a complex system that needs appropriate strategy and planning, various concepts including project management, strategic management, and sustainability were hugely employed in developing the master plan. In addition, the usability of the master plan was evaluated by 12 experts from the academia and industry via a peer review method. This evaluation consists of two main phases including data collection through semi-structured interview and data analysis using ATLAS.ti 6 software. As a result, the roadmap in the S-ERP system implementation master plan was divided into two concepts: general overview and specific features, followed by the purpose of each step. Moreover, the framework in the S-ERP system implementation master plan was divided into two frameworks: sustainability implementation portfolio and S-ERP implementation project. Following the concept employed in the frameworks, the guidelines were divided into two guidelines: sustainability implementation portfolio and S-ERP implementation project. From the evaluation results, the experts confirmed that the proposed S-ERP implementation master plan can generally be used for implementing S-ERP systems in all types of industry. The master plan for the implementation of S-ERP system could serve as a theoretical base for further research in S-ERP system, which can give more insights into the system implementation. In addition, this master plan could serve as a tool for practitioners in implementing S-ERP systems within organisations.



## ABSTRAK

Dunia berhadapan dengan masalah integrasi di antara fungsi-fungsi perniagaan yang lestari. Data kelestarian tidak cukup bersepadu dan digunakan untuk membuat keputusan. Untuk menyelesaikan masalah ini, organisasi memerlukan sistem maklumat bagi memudahkan inisiatif kelestarian mereka. Beberapa vendor seperti SAP, Microsoft dan Oracle telah membangunkan sistem perancangan sumber perusahaan lestari (Sustainable Enterprise Resource Planning, S-ERP) sebagai satu penyelesaian yang menyeluruh untuk menyokong inisiatif kelestarian. Walau bagaimanapun, organisasi masih menghadapi masalah untuk melaksanakan sistem ini. Terdapat kekurangan pelan induk yang menunjukkan peringkat, dimensi dan langkah-langkah untuk membantu pengamal dalam melaksanakan sistem S-ERP. Oleh itu, kajian ini bertujuan untuk membangunkan satu pelan induk pelaksanaan S-ERP yang terdiri daripada pelan tindakan, rangka kerja dan garis panduan, dan untuk menilai kebolegunaan pelan induk daripada perspektif ahli-ahli akademik dan pengamal. Untuk mencapai objektif kajian, kajian ini menggunakan kaedah penyelidikan konsep yang bergantung terutamanya kepada literatur bagi pembangunan pelan induk. Pelbagai bidang penyelidikan termasuk kelestarian, sistem perancangan sumber perusahaan (Enterprise Resource Planning, ERP), dan literatur yang berkaitan diamati untuk mengetahui bagaimana ahli-ahli akademik dan pengamal menyelesaikan masalah integrasi di antara fungsi-fungsi perniagaan yang lestari. Oleh kerana sistem S-ERP adalah sistem yang kompleks yang memerlukan strategi dan perancangan yang sesuai, pelbagai konsep termasuk pengurusan projek, pengurusan strategik, dan kelestarian telah digunakan dengan meluas dalam membangunkan pelan induk. Selain itu, kebolegunaan pelan induk telah dinilai oleh 12 orang pakar yang terdiri daripada ahli akademik dan pengamal melalui kaedah semakan sejawat. Penilaian ini terdiri daripada dua fasa utama termasuk pengumpulan data melalui temubual separa berstruktur dan analisis data menggunakan perisian ATLAS.ti 6. Sebagai hasilnya, pelan tindakan dalam pelan induk pelaksanaan sistem S-ERP telah dibahagikan kepada dua konsep: gambaran umum dan ciri-ciri khusus, diikuti dengan tujuan setiap langkah. Selain itu, rangka kerja dalam pelan induk pelaksanaan sistem S-ERP telah dibahagikan kepada dua kerangka: portfolio pelaksanaan kelestarian dan projek pelaksanaan sistem S-ERP. Mengikuti konsep yang digunakan dalam rangka kerja, garis panduan telah dibahagikan kepada dua garis panduan: portfolio pelaksanaan kelestarian dan projek pelaksanaan sistem S-ERP. Hasil daripada penilaian, pakar-pakar mengesahkan bahawa pelan induk pelaksanaan S-ERP yang dicadangkan dapat digunakan umumnya bagi melaksanakan sistem S-ERP dalam semua jenis industri. Pelan induk bagi pelaksanaan sistem S-ERP boleh berfungsi sebagai asas teoritikal untuk penelitian lebih lanjut dalam kajian sistem S-ERP, yang dapat memberikan gambaran yang lebih jelas mengenai pelaksanaan sistem. Di samping itu, pelan induk ini boleh berfungsi sebagai alat untuk pengamal melaksanakan sistem S-ERP dalam organisasi.